

## SECTION 16135

### ELECTRICAL BOXES AND FITTINGS

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Extent of electrical box and associated fitting work is indicated by drawings and schedules.
- B. Types of electrical boxes and fittings in this section include the following:
  - 1. Outlet boxes.
  - 2. Junction boxes.
  - 3. Pull boxes.
  - 4. Bushings.
  - 5. Locknuts.
  - 6. Knockout closures.

#### PART 2 - PRODUCTS

##### 2.1 FABRICATED MATERIALS

- A. Outlet Boxes: Conform to UL 514A, "Metallic Outlet Boxes, Electrical," and UL 514B, "Fittings for Conduit and Outlet Boxes." Boxes shall be of type, shape, size and depth to suit each location and application.
  - 1. Conform to NEMA OS 1, "Sheet Steel Outlet Boxes, Device Boxes, Covers and Box Supports." Boxes shall be sheet steel with stamped knockouts, threaded screw holes and accessories suitable for each location including mounting brackets and straps, cable clamps, exterior rings and fixture studs.
- B. Raintight Outlet Boxes: Provide corrosion-resistant cast-metal raintight outlet wiring boxes, of types, shapes and sizes, including depth of boxes, with threaded conduit holes for fastening electrical conduit, cast-metal face plates with spring-hinged watertight caps suitably configured for each application, including face plate gaskets and corrosion-resistant plugs and fasteners.
- C. Junction and Pull Boxes: Provide galvanized code-gage sheet steel junction and pull boxes, with screw-on covers; of types, shapes and sizes, to suit each respective location and installation; with welded seams and equipped with steel nuts, bolts, screws and washers.
- D. Bushings, Knockout Closures and Locknuts: Provide corrosion-resistant box knockout closures, conduit locknuts and conduit bushings, offset connectors, of types and sizes, to suit respective installation requirements and applications.

#### PART 3 - EXECUTION

##### 3.1 INSTALLATION OF ELECTRICAL BOXES AND FITTINGS

- A. General: Install electrical boxes and fittings as indicated, in accordance with manufacturer's written instructions, applicable requirements of NEC and NECA's "Standard of Installation" and in accordance with recognized industry practices to fulfill project requirements.

- B. Surface-mounted device boxes in unfinished areas shall be a minimum of 4-inch square knockout type. Surface-mounted boxes in finished and exterior areas, shall be cast metal, threaded hub similar to Crouse Hinds "FS" or "FD" conduit box.
- C. Coordinate installation of electrical boxes and fittings with wire/cable, wiring devices and raceway installation work.
- D. Provide weathertight outlets for interior and exterior locations exposed to weather or moisture.
- E. Provide knockout closures to cap unused knockout holes where blanks have been removed.
- F. Install electrical boxes in those locations, which ensure ready accessibility to enclosed electrical wiring. Junction boxes shall not be installed above non-accessible ceilings.
- G. Avoid installing boxes back-to-back in walls. Provide not less than 24-inch separation.
- H. Avoid installing aluminum products in concrete.
- I. Position recessed outlet boxes accurately to allow for surface finish thickness.
- J. Avoid using round boxes where conduit must enter box through side of box, which would result in difficult and insecure connections when fastened with locknut or bushing on rounded surfaces.
- K. Fasten electrical boxes firmly and rigidly to substrates or structural surfaces to which attached or solidly embed electrical boxes in concrete or masonry. Box support shall be independent of conduit.
- L. Provide electrical connections for installed boxes.
- M. Subsequent to installation of boxes, protect boxes from construction debris and damage.

### 3.2 POSITION OF OUTLETS

- A. The Electrical Contractor shall consult with Mechanical and General Contractor prior to rough-in outlets and shall set boxes to avoid interference with equipment installation in walls or ceilings.
- B. Outlets shall be centered with respect to paneling, trim, furring, etc. Outlets improperly located shall be corrected at Contractor's expenses. Outlets shall be set plumb, secured firmly in place with face of box or plaster ring extending to finished surface or wall, ceiling or floor as the case may be.
- C. Washers or bushings shall be installed between recessed box and device strap to make a flush rigid installation of the device installed.
- D. The following mounting height schedule is included to assist the Contractor in estimating. All device locations shall be coordinated with Architectural details and elevations. Exact heights shall be obtained from the Project Superintendent at the time of installation or taken from drawings as shown thereon. Heights of device outlets are noted in inches from the finished floor.

### 3.3 GROUNDING

- A. Upon completion of installation work, ground electrical boxes as required by NEC and other Division 16 Sections.

END OF SECTION